The Surgical Treatment of Intractable Ascites by the Intramuscular Peritoneal Drainage Operation

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There are three important physiopathological states which lead to the formation of ascites. The first and most frequently observed one is cirrhosis of the liver. The second cause is the implantation of a malignant neoplasm on the peritoneum usually secondary to carcinoma of the gastrointestinal tract or the ovary but occasionally the neoplasm is primary such as a mesothelioma. Thirdly, cirrhosis of the liver due to repeated and long-standing congestive heart failure may lead to ascites.

The vast majority of patients with ascites obtain satisfactory relief by adequate management of the underlying condition. However, there is a significant group in which the ascites is intractable and will not respond to the best management requiring repeated paracenteses for relief. In patients with cirrhosis of the liver, whatever the etiology, not only is this a tedious and painful procedure but, of greater importance, the prolonged loss of protein often leads to cachexia and death. Similarly the control of ascites secondary to malignant peritoneal implants clouds the last weeks and months of many of these patients although in other respects they may be fairly comfortable.

An operative procedure has been devised wherein the ascitic fluid is enabled to flow through the lumen of a glass button into a large subcutaneous pocket, the deeper aspect of which is formed by the muscles of the abdominal wall. Exposure of these muscles to the ascitic fluid is brought about by wide resection of the overlying deep fascia. Hence the fluid is absorbed continuously by means of the lymphatics in the muscles.

Eight patients with intractable ascites have been operated upon by the procedure outlined above. The cause of the ascites in six of them was portal hypertension associated with cirrhosis of the liver, while in two patients, the ascites was due to malignant peritoneal implants. The first patient in this series was operated upon in March 1947. The results have been as follows: complete subsidence of ascites in four patients; persistence of the ascites to a very mild degree without need for further paracenteses in two patients; failure in one patient, and one patient died two weeks post-operatively from massive hemorrhage. Experience with the patient designated as a failure, who was the second one in the series, led to improvements in technical details which have proven to be of value.

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Prolongation of Action of Heparin

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The anticoagulant effect of heparin was prolonged by incorporation of this substance in various menstruums. A concentration of 200-300 mg. per cc. of aqueous heparin solution emulsified in an equal quantity of menstruum composed of cholesterol derivatives (35%), peanut oil (65%), and beeswax (2%) gave the most satisfactory prolongation of the coagulation time. With this technique the coagulation time of the blood was prolonged from 200 to 900% of normal for a period of 17 to 24 hours after a single intramuscular injection. The dosage of heparin varied with the weight of the patient, approximately 1½-2 mg. per pound body weight being required. There was no hemorrhage at the site of injection and pain was negligible. Further experiments involving the use of vasoconstrictors and other menstruums are being conducted.